

# ***Headwaters to the Southern San Diego Bay: Planning and Management in the Otay River Watershed***

Presentation by:

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*Aspen Environmental Group*

Pat Atchison  
*TAIC*



## **Outline of Presentation**

- ▶ Watershed Overview
- ▶ Project Objectives (SAMP & WMP)
- ▶ Opportunities and Constraints at Proctor Valley
- ▶ GIS Decision Support Tool for Resource Management

### Watershed Overview

- ▶ 93,000 acres (154 sq mi)
- ▶ Population, housing, workplaces to double by 2030
- ▶ 9% impervious cover; could increase to 16%
- ▶ Development in west (lower watershed)
- ▶ MSCP preserves east of reservoirs
- ▶ Other protected areas: NWR, CDFG, County, BLM, USFS, Otoy Ranch preserve, OVRP



## Watershed Overview: ORWMP and SAMP

### ► ORWMP: Watershed Management Strategies

- Identify goals & objectives
- Evaluate watershed problems and devise solutions
- Prepare plan (adaptable)

### ► SAMP: Regulatory Mechanisms for Aquatic Resources

- Area of intense developmental pressure and sensitive resources
- Comprehensive aquatic resource assessment, protection, enhancement, and restoration
- Provides foundation for permit streamlining



## Watershed Overview: ORWMP

- ▶ Involve Stakeholders  
(monthly meetings)
- ▶ Characterize  
Watershed and  
Assess Problems
- ▶ Develop Strategies to:
  - Protect, enhance, and restore natural resources
  - Monitor effectiveness of actions
- ▶ Prepare the Watershed Management Plan
  - Update periodically (“living” plan)



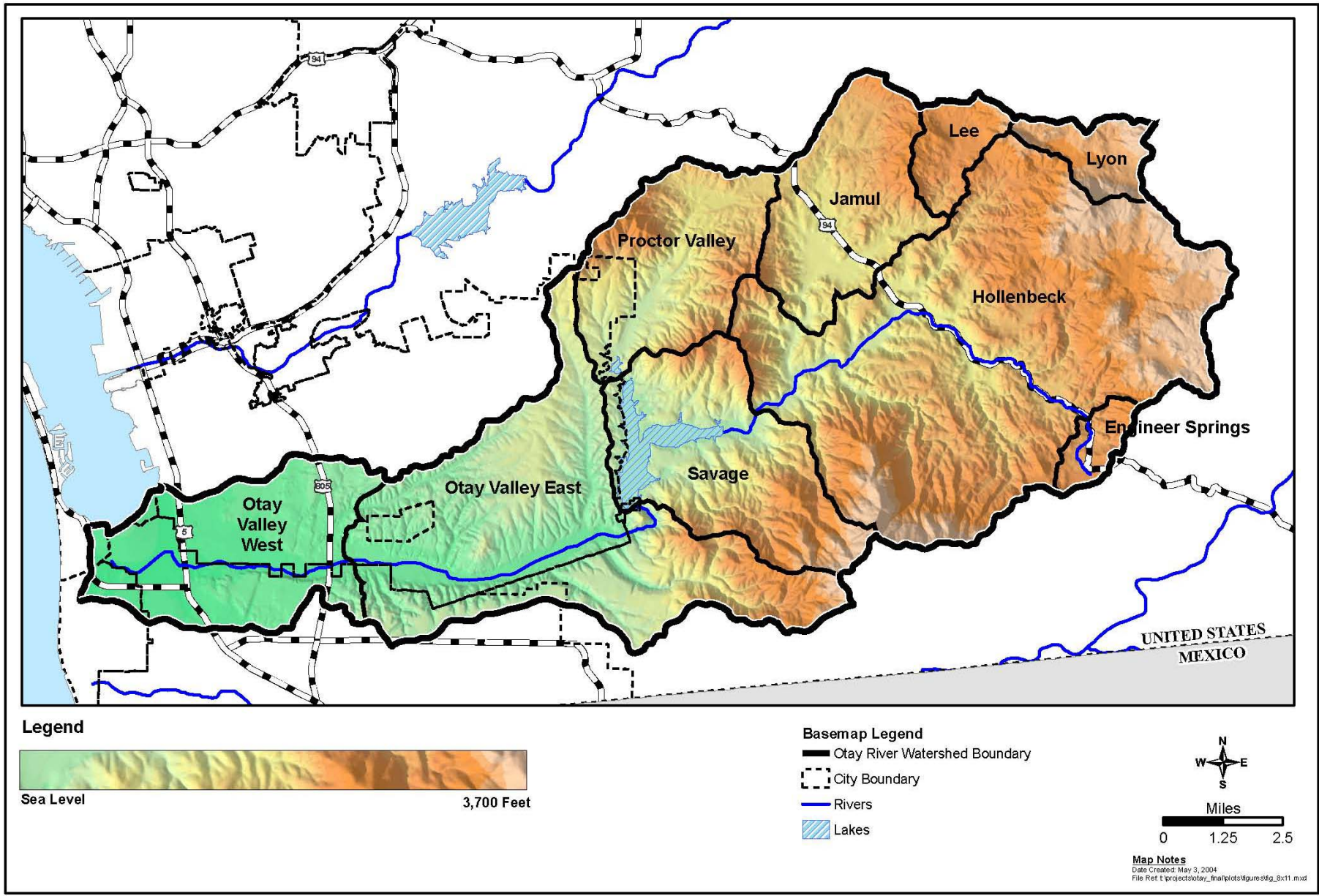
## Watershed Overview: SAMP

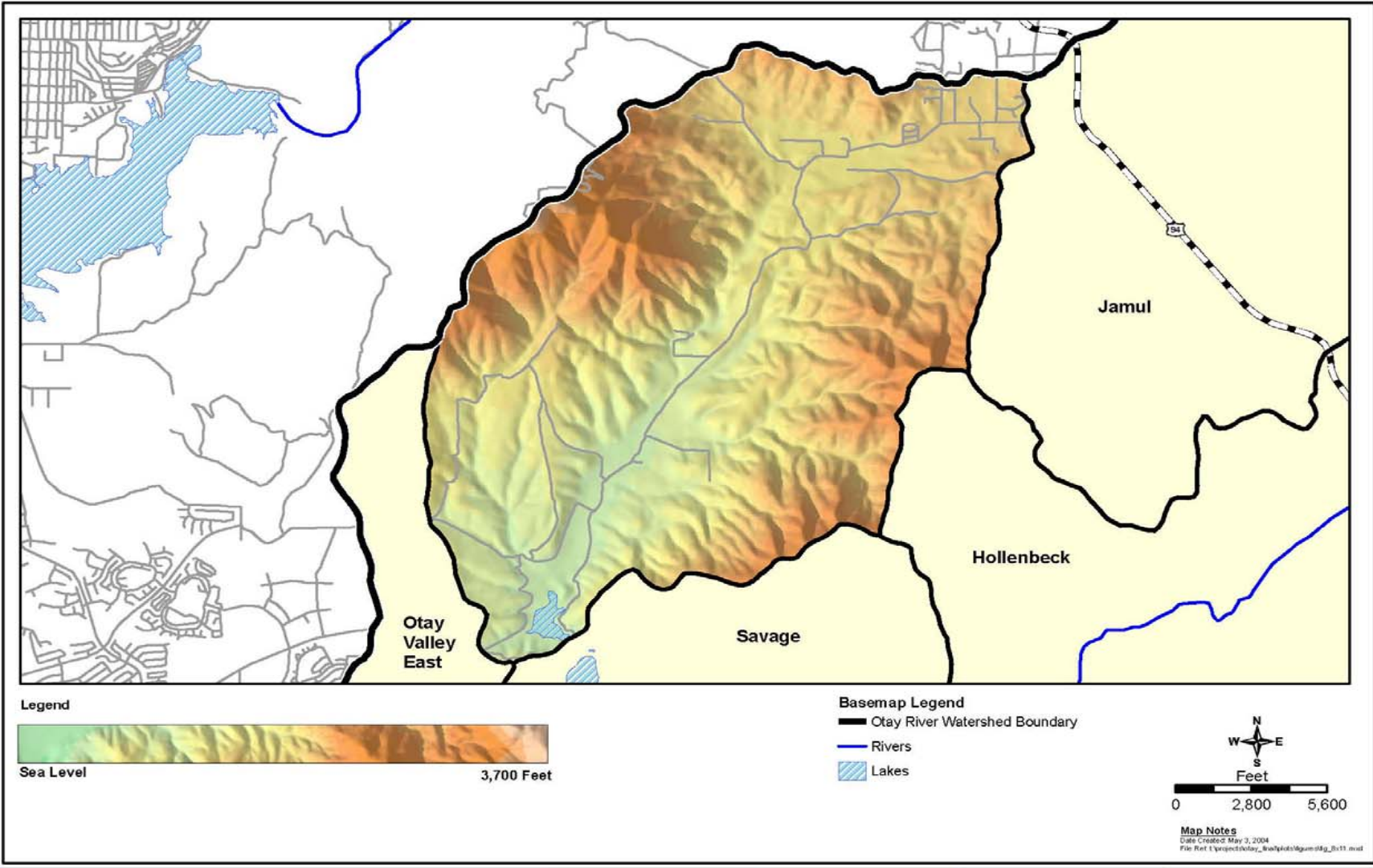
- ▶ Involve Stakeholders
- ▶ Conduct Technical Studies
- ▶ Identify Purpose and Need
- ▶ Develop and Analyze Alternatives
- ▶ Prepare Comprehensive Mitigation & Monitoring Plan
- ▶ Complete NEPA/CEQA Review
- ▶ Implement SAMP and Obtain Permits



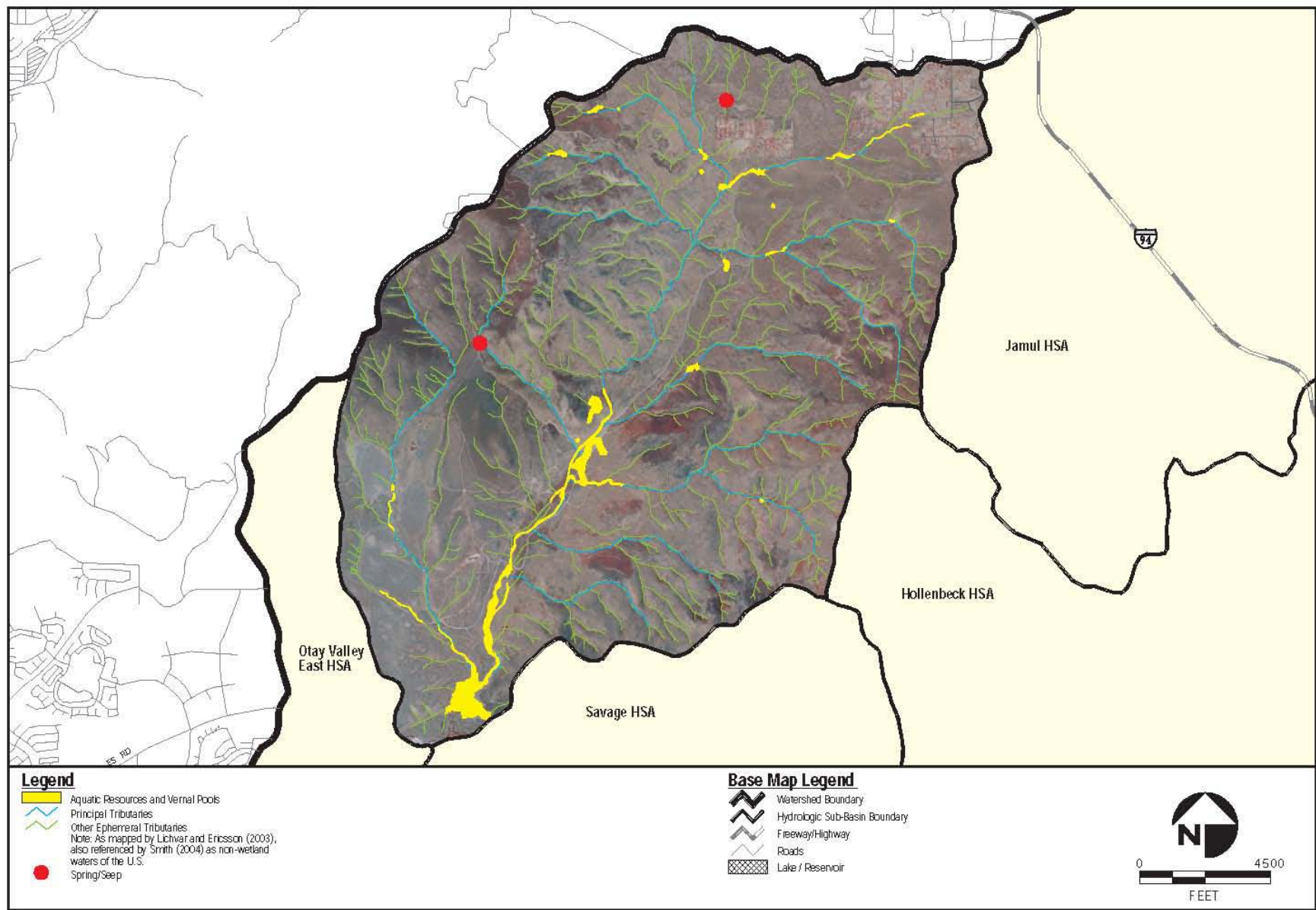


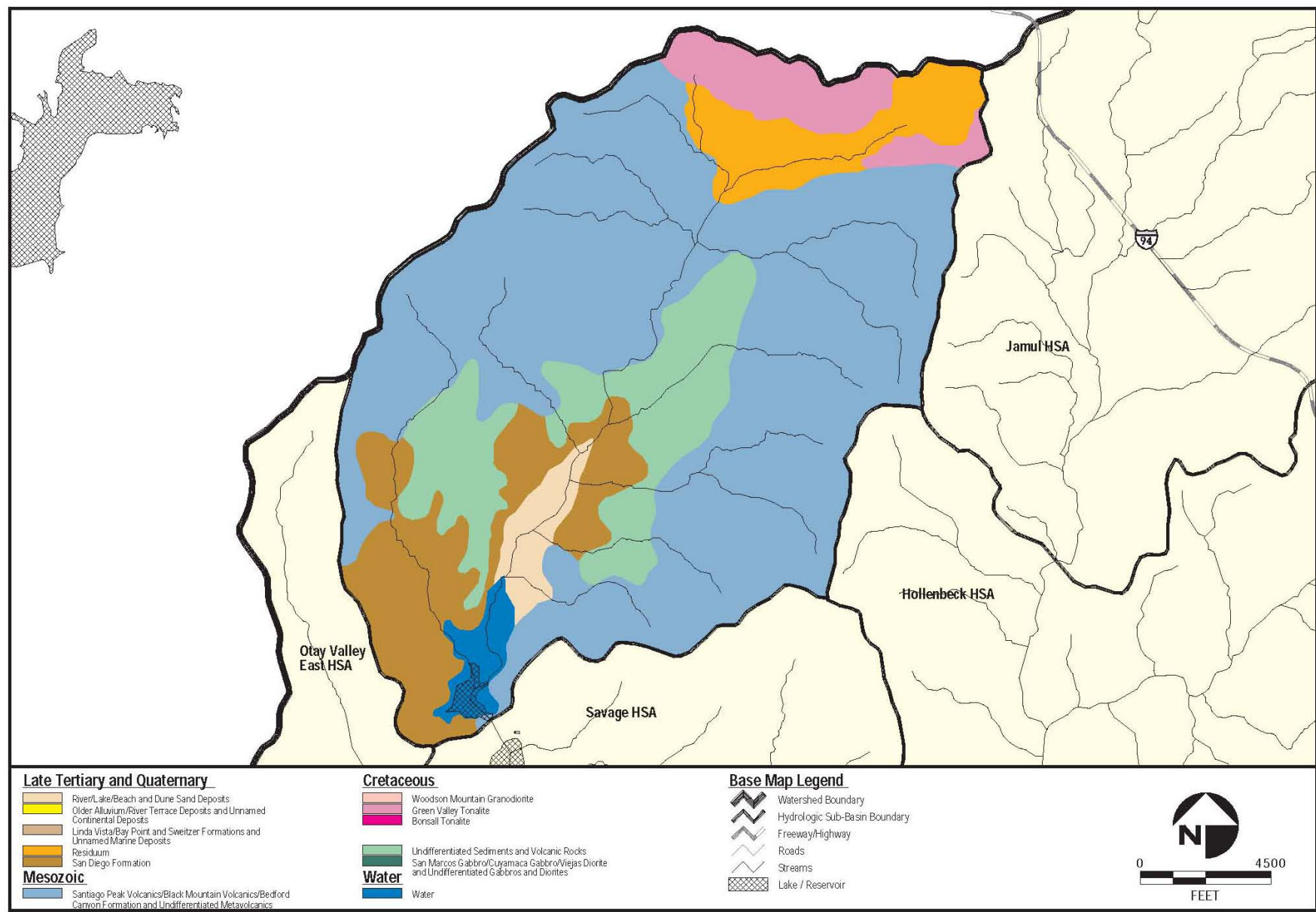
# Planning & Management in the Otay River Watershed

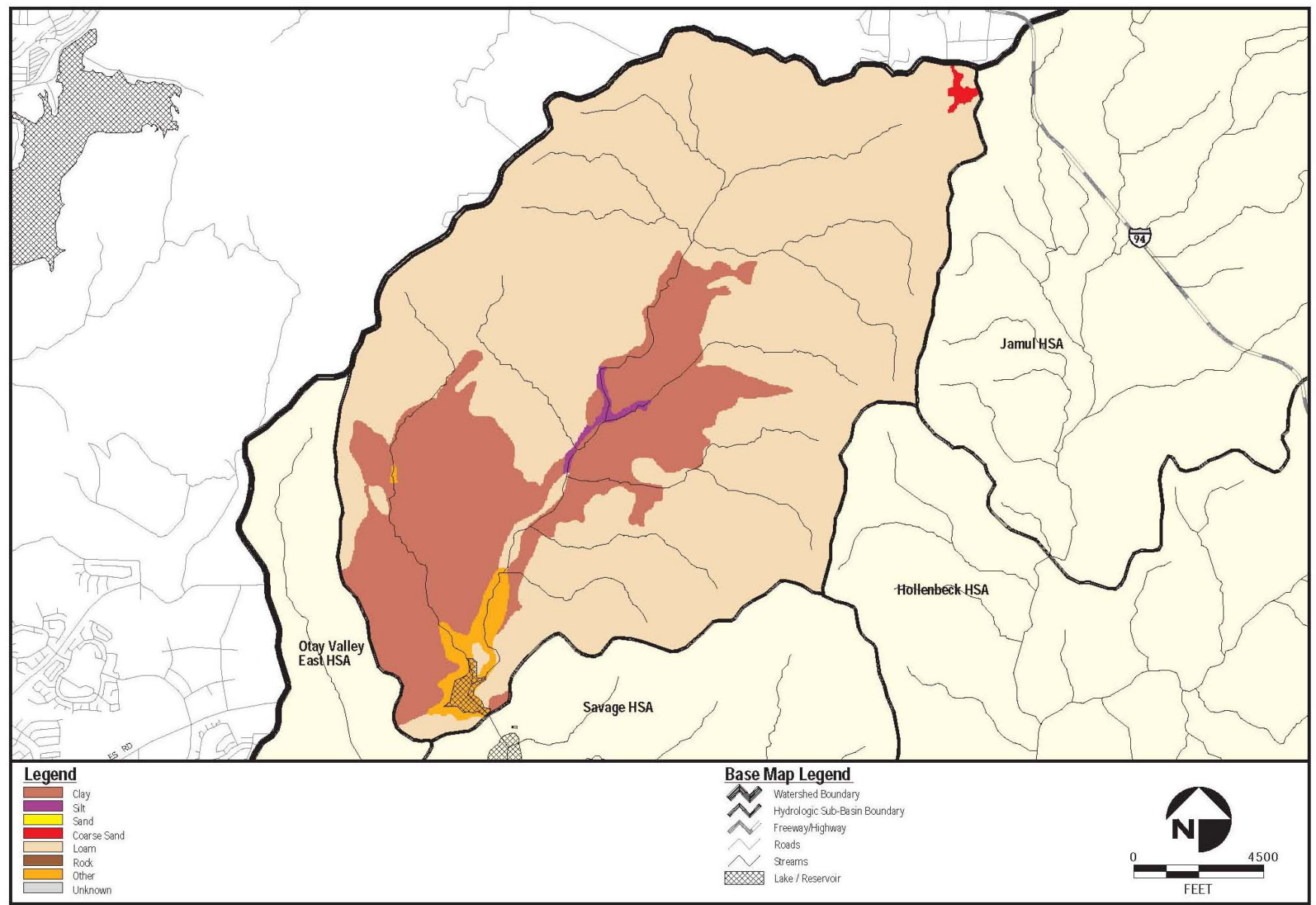




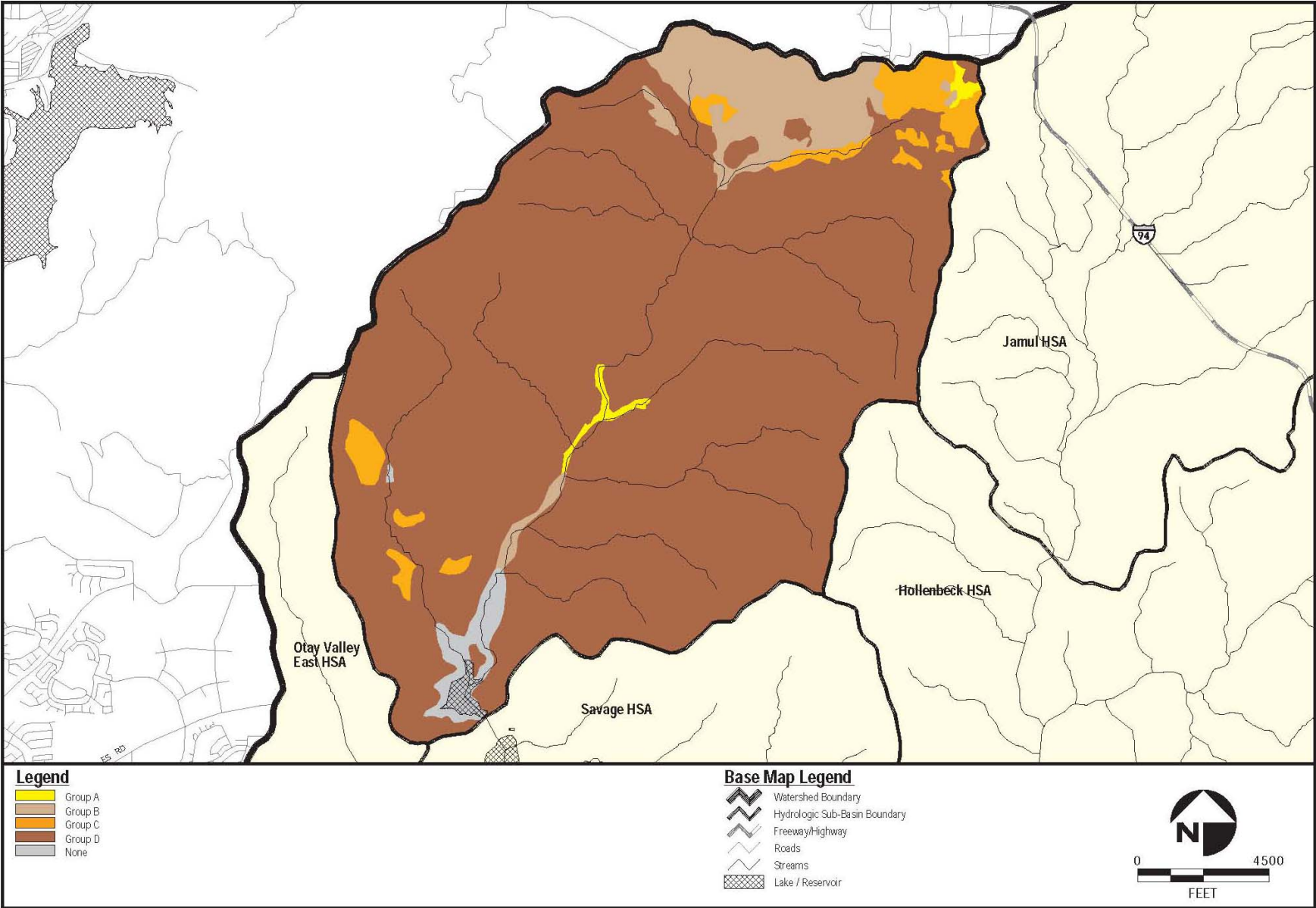




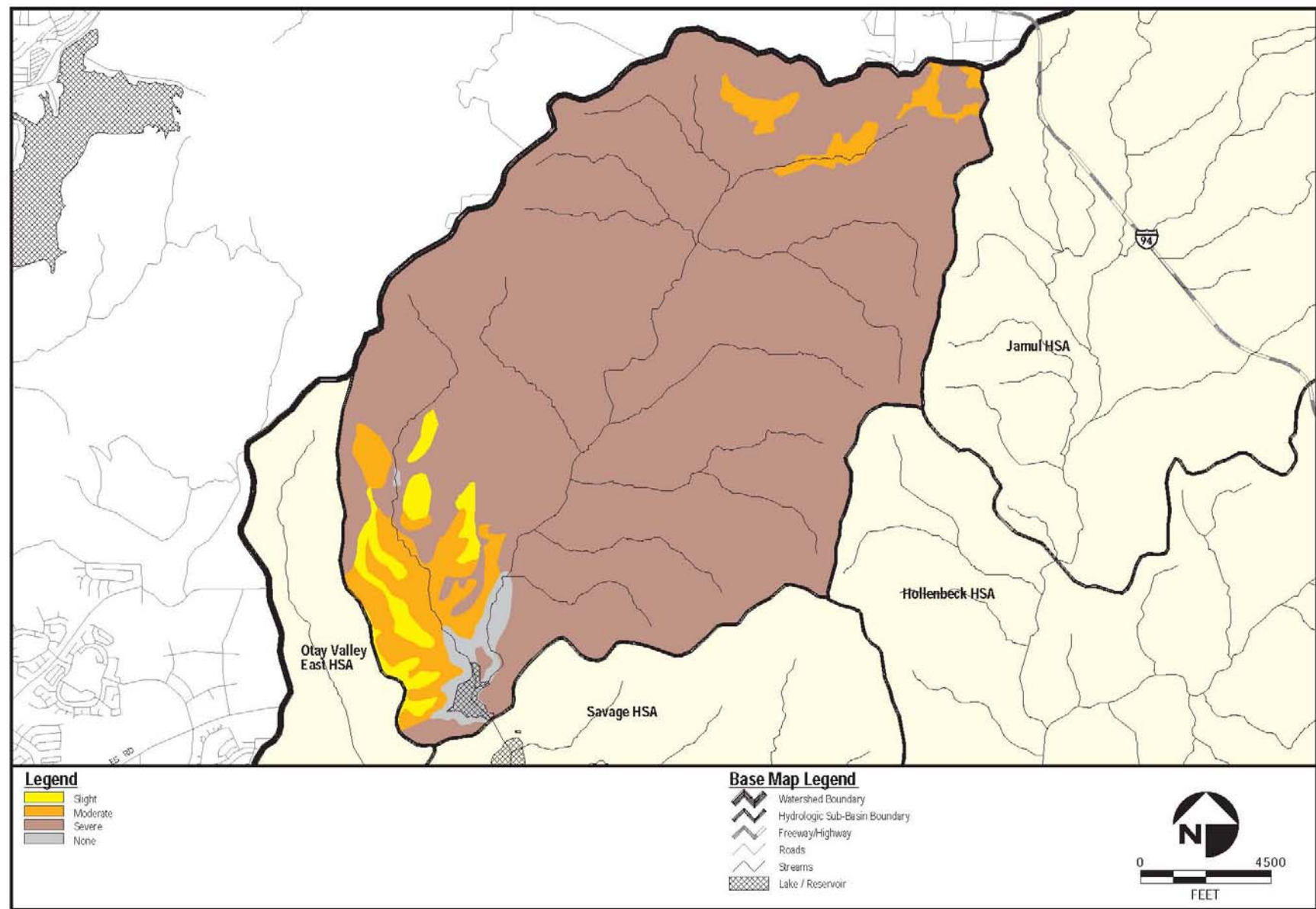


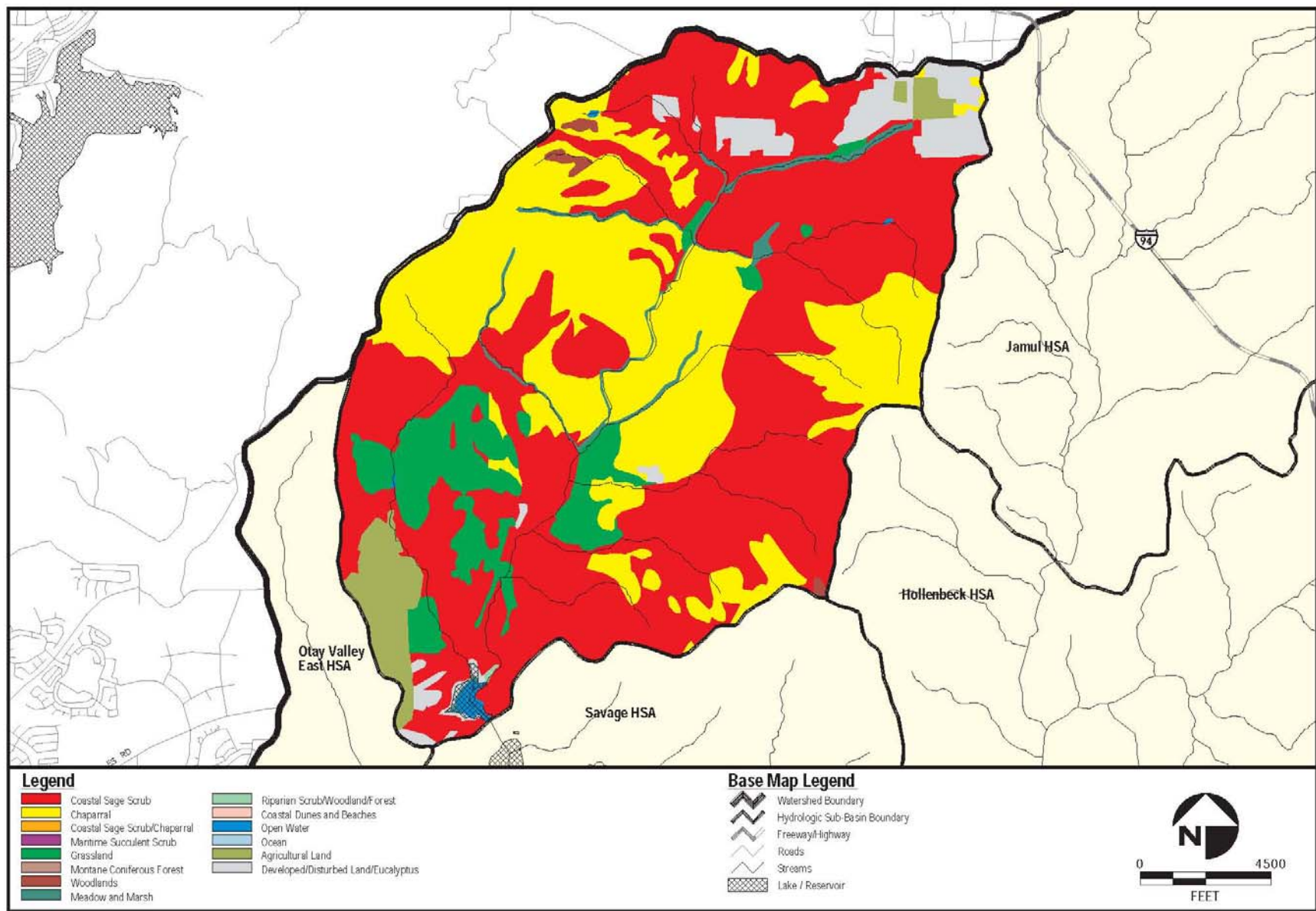


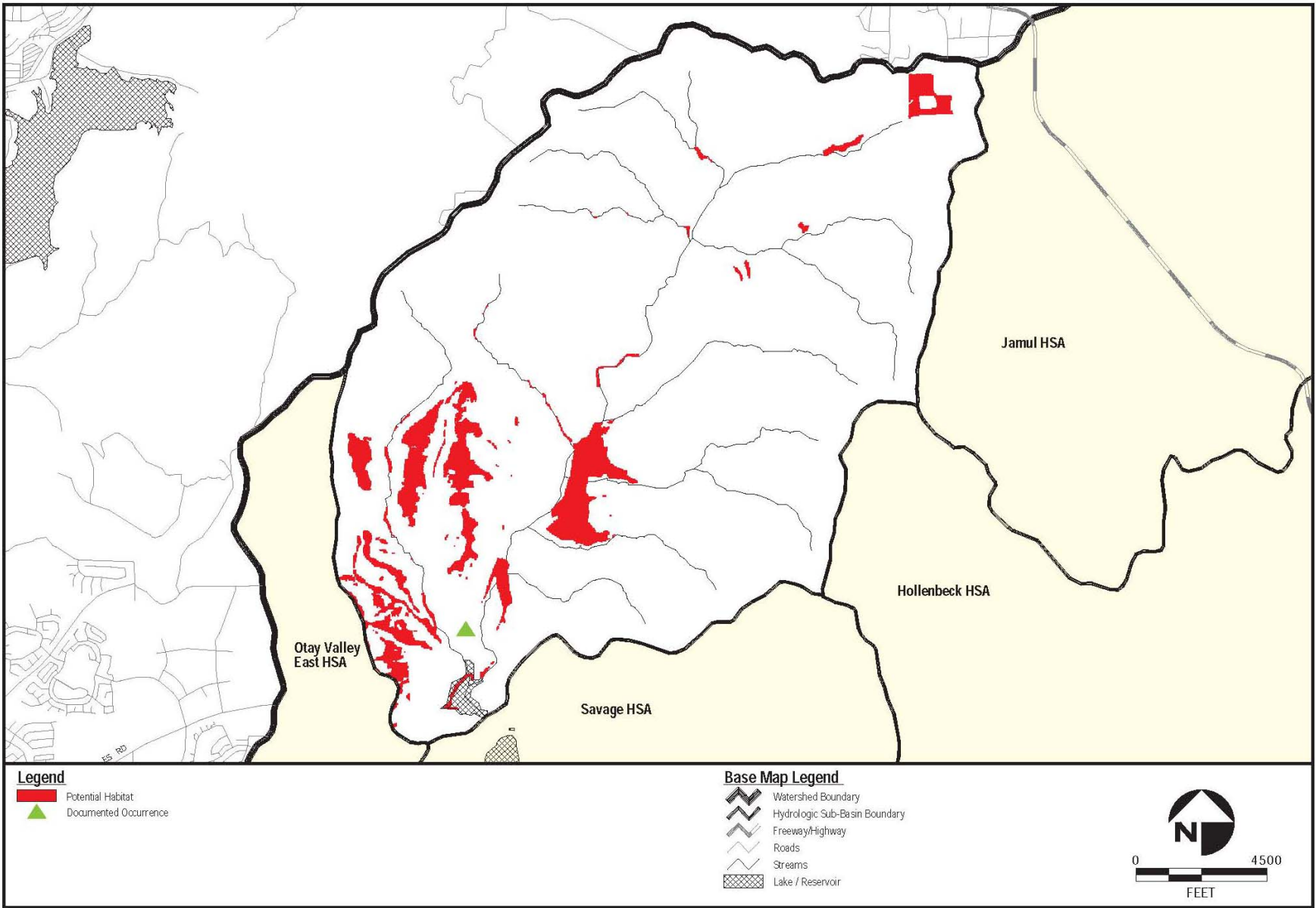




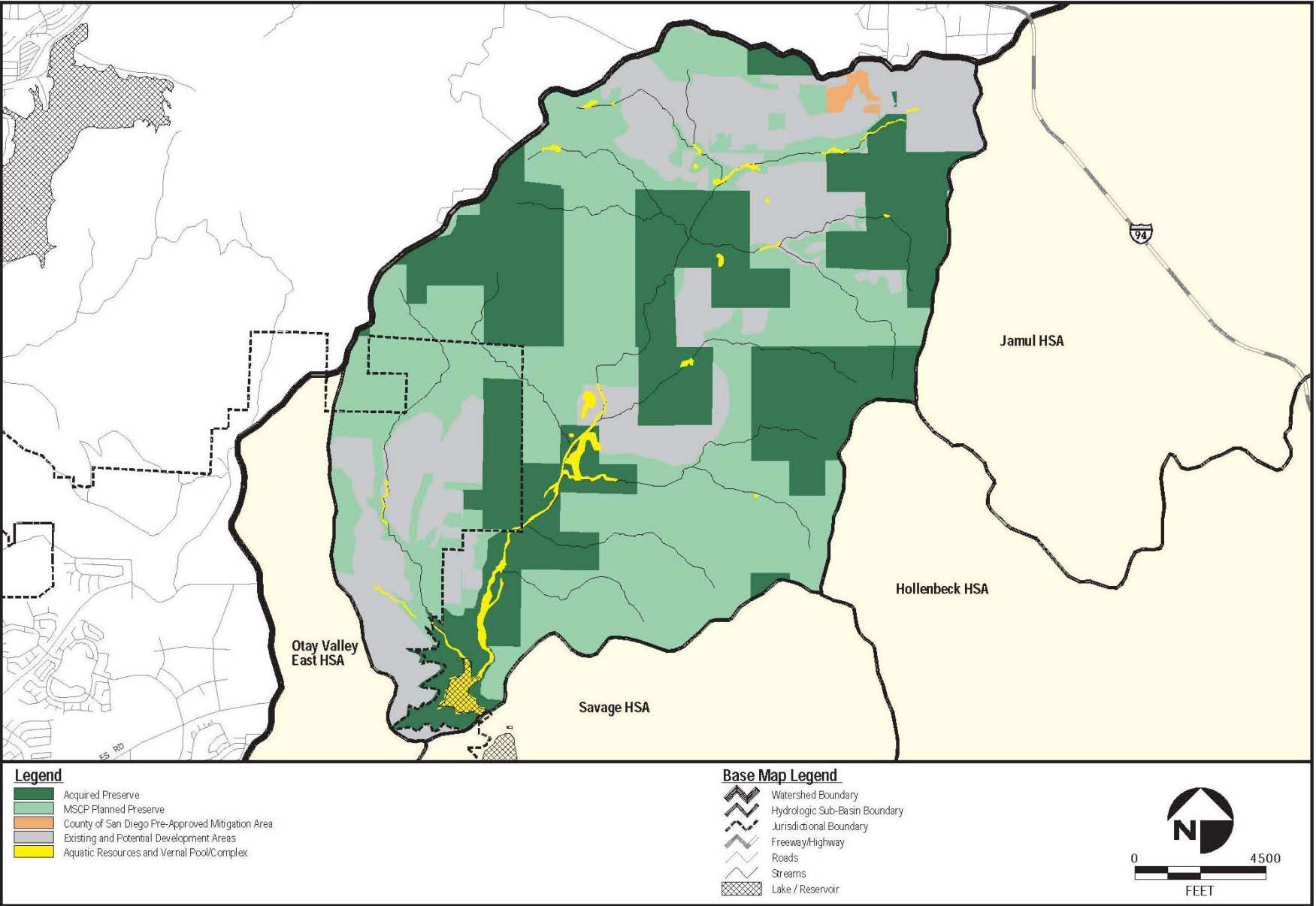














## GIS Implementation

- ▶ GIS Data Collection and Digital Data Deliverable
- ▶ GIS Decision Support Tool
- ▶ Web-based Tool for GIS Data Query

## GIS Data Collection and Digital Data Deliverable

- ▶ Collected existing GIS data from local agencies – multiple sources
- ▶ Over 100 layers organized and documented
- ▶ Delivered with Excel table with links to .pdf map and metadata

Microsoft Excel - Otay WMP and SAMP GIS Data List.xls

File Edit View Insert Format Tools Data Window Help

Type a question for help

Reply with Changes... End Review...

I15 Veg - Otay

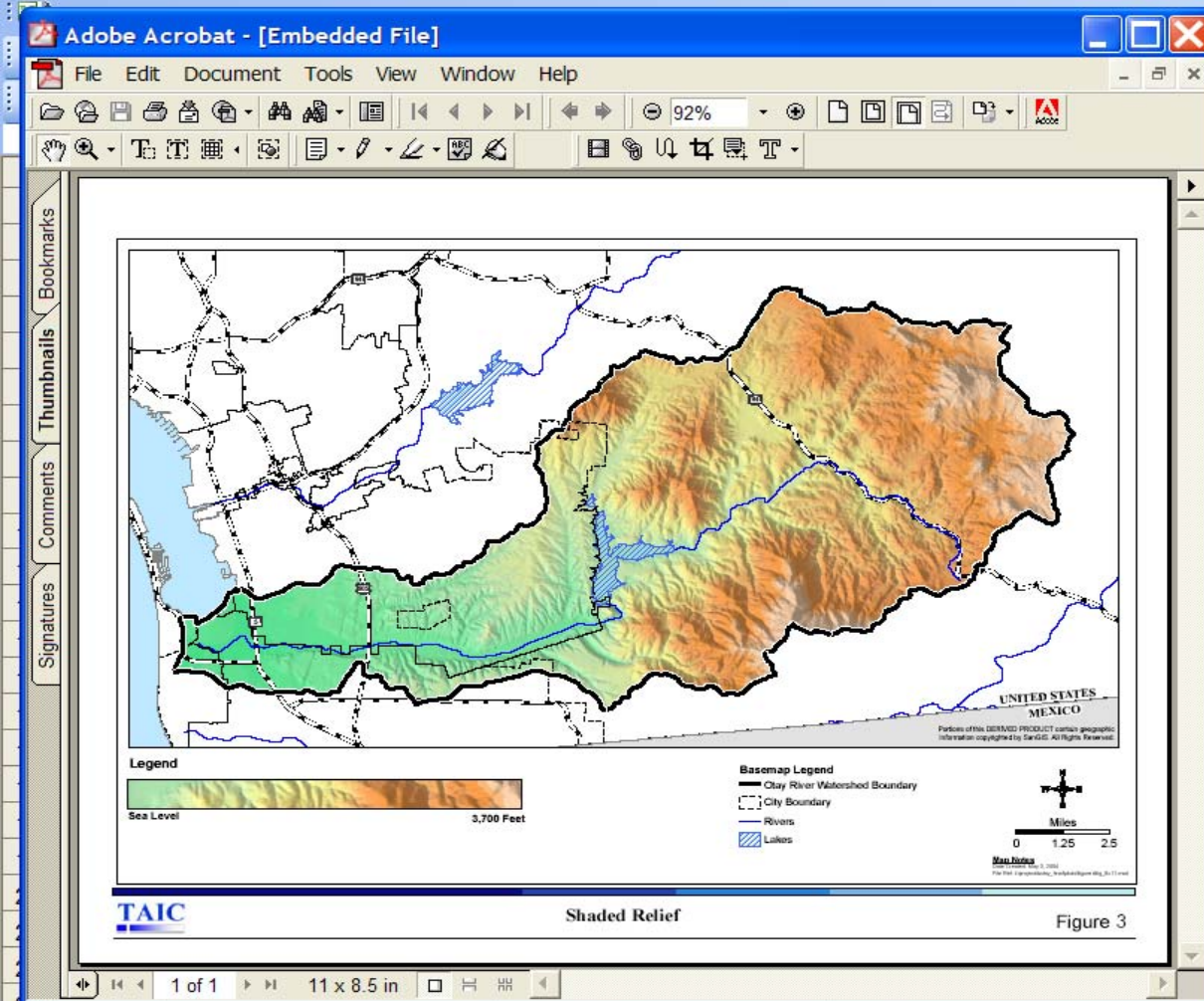
	A	B	C	D	F	I
	Type	GIS Data Layer	File Name	Name of Map	Map Link	Metadata
2	BASE					
3		County Boundary	County Boundary	n/a	n/a	<a href="#">County Boundary</a>
4		Freeways	Freeways	n/a	n/a	<a href="#">Freeways</a>
5		Lakes	Lakes - Otay	n/a	n/a	<a href="#">Lakes - Otay</a>
6		Orthophoto	n/a	n/a	n/a	n/a
7		Parcels	n/a	Parcel Boundaries	<a href="#">Parcel Boundaries</a>	n/a
8		Roads	n/a	Roads	<a href="#">Roads</a>	n/a
9		Shaded Relief	hillshade	Shaded Relief	<a href="#">Shaded Relief</a>	<a href="#">hillshade</a>
10		Streams	Streams	n/a	n/a	<a href="#">Streams - Otay</a>
11		Topography	Topo - Otay	Topography	<a href="#">Topography</a>	<a href="#">Topo - Otay</a>
12		USGS 100,000 Scale Topo	n/a	USGS 100,000 Scale Topo Map	<a href="#">USGS 100,000 Scale Topo Map</a>	n/a
13						
14	BIO					
15		Aggregated Vegetation	Veg - Otay	Vegetation Communities	<a href="#">Vegetation Communities</a>	<a href="#">Veg - Otay</a>
16		Vernal Pool	Vernal Pool - Otay	Vernal Pools and Vernal Pool Complexes	<a href="#">Vernal Pools and Vernal Pool Complexes</a>	<a href="#">Vernal Pool - Otay</a>
17		Vernal Pool Complexes	Vernal Pool Complex - Otay	Vernal Pools and Vernal Pool Complexes	<a href="#">Vernal Pools and Vernal Pool Complexes</a>	<a href="#">Vernal Pool Complex - Otay</a>
18		Wildlife Corridors	Wildlife Corridor	Wildlife Corridors/Habitat Linkages	<a href="#">Wildlife Corridors/Habitat Linkages</a>	<a href="#">Wildlife Corridor - Otay</a>
19	Species	American Badger	n/a	American Badger	<a href="#">American Badger</a>	n/a
20		Arroyo Toad	n/a	Arroyo Toad	<a href="#">Arroyo Toad</a>	n/a
21		California Gnatcatcher	n/a	California Gnatcatcher	<a href="#">California Gnatcatcher</a>	n/a
22		Least Bell's Vireo	n/a	Least Bell's Vireo	<a href="#">Least Bell's Vireo</a>	n/a
23		Mountain Lion	n/a	Mountain Lion	<a href="#">Mountain Lion</a>	n/a
24		Mule Deer	n/a	Mule Deer	<a href="#">Mule Deer</a>	n/a
25		Orcutt's Brodiaea	n/a	Orcutt's Brodiaea	<a href="#">Orcutt's Brodiaea</a>	n/a
26		Quino Checkerspot Butterfly	n/a	Quino Checkerspot Butterfly	<a href="#">Quino Checkerspot Butterfly</a>	n/a
27		Riverside Fairy Shrimp	n/a	Riverside Fairy Shrimp	<a href="#">Riverside Fairy Shrimp</a>	n/a
28		San Diego Button Celery	n/a	San Diego Button Celery	<a href="#">San Diego Button Celery</a>	n/a
29		San Diego Fairy Shrimp	n/a	San Diego Fairy Shrimp	<a href="#">San Diego Fairy Shrimp</a>	n/a

Sheet1

Draw AutoShapes

Ready

start 4 M... 3 M... 4 W... 6 M... Micro... Adob... 2:14 PM



Type a question for help

	F	I
	Map Link	Metadata
	n/a	<a href="#">County Boundary</a>
	n/a	<a href="#">Freeways</a>
	n/a	<a href="#">Lakes - Otay</a>
	n/a	n/a
	<a href="#">Parcel Boundaries</a>	n/a
	<a href="#">Roads</a>	n/a
	<a href="#">Shaded Relief</a>	<a href="#">hillshade</a>
	n/a	<a href="#">Streams - Otay</a>
	<a href="#">Topography</a>	<a href="#">Topo - Otay</a>
	<a href="#">USGS 100,000 Scale Topo Map</a>	n/a
	<a href="#">Vegetation Communities</a>	<a href="#">Veg - Otay</a>
plexes	<a href="#">Vernal Pools and Vernal Pool Complexes</a>	<a href="#">Vernal Pool - Otay</a>
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	<a href="#">Wildlife Corridors/Habitat Linkages</a>	<a href="#">Wildlife Corridor - Otay</a>
	<a href="#">American Badger</a>	n/a
	<a href="#">Arroyo Toad</a>	n/a
	<a href="#">California Gnatcatcher</a>	n/a
	<a href="#">Least Bell's Vireo</a>	n/a
	<a href="#">Mountain Lion</a>	n/a
	<a href="#">Mule Deer</a>	n/a
	<a href="#">Orcutt's Brodiaea</a>	n/a
	<a href="#">Quino Checkerspot Butterfly</a>	n/a
	<a href="#">Riverside Fairy Shrimp</a>	n/a
	<a href="#">San Diego Button Celery</a>	n/a
	<a href="#">San Diego Fairy Shrimp</a>	n/a

24	Mule Deer	n/a	Mule Deer
25	Orcutt's Brodiaea	n/a	Orcutt's Brodiaea
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27	Riverside Fairy Shrimp	n/a	Riverside Fairy Shrimp
28	San Diego Button Celery	n/a	San Diego Button Celery
	San Diego Fairy Shrimp	n/a	San Diego Fairy Shrimp

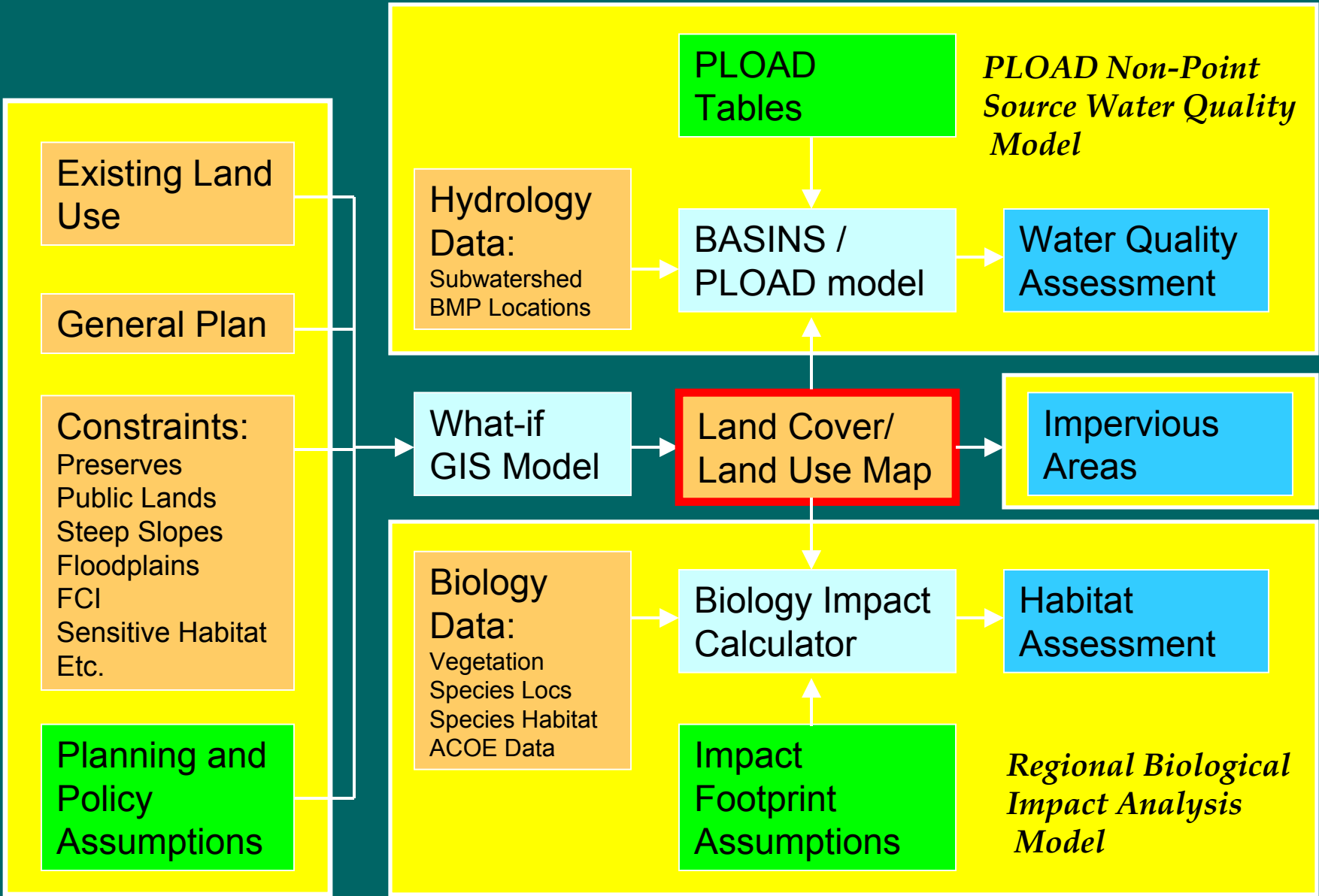




## GIS Decision Support Tool

- ▶ Automated process to estimate future build-out scenarios – land use type and intensities.
- ▶ Based on land cover, tool will:
  1. Extrapolate and tabulate impervious areas
  2. Calculate impacts to biological resources
  3. Input data to PLOAD water quality model and display results

# Planning & Management in the Otay River Watershed



## GIS Decision Support Tool (Cont)

- ▶ Designed to be flexible
- ▶ Able to model and analyze policies and actions proposed under the WMP and SAMP



## Web-based Tool for GIS Data Query

- ▶ Customized ArcIMS application to display project information and data
- ▶ Zoom to:
  - Parcel
  - Subwatersheds
- ▶ Easy-to-use interface to display tabular queries and mapped information

# OTAY RIVER WATERSHED

## Watershed Management Plan and Special Area Management Plan

☐ Refresh Automatically

Refresh Map

Data

New Search

Layers

Legend

Tools



ID

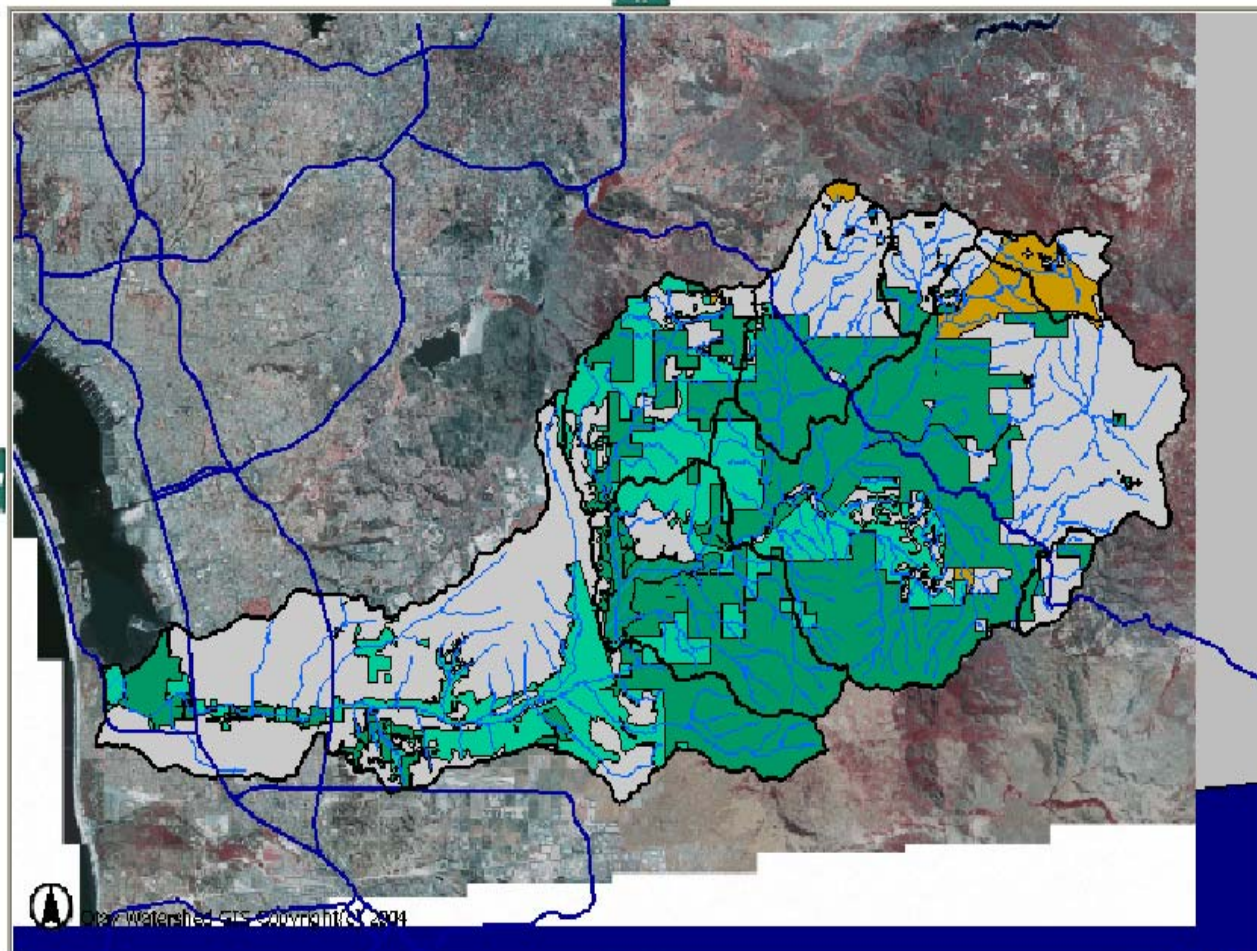


Note: ☒ = Draw Layer  
Some layers may not draw at all scales

- [Vegetation](#)
- [Hydrography](#)
- [Imagery](#)
- [Infrastructure](#)
- [Land Use & Development](#)
- [Parcels](#)
- [Preserve](#)

☒ Combined Habitat Preserve

- Acquired Preserves
- County of San Diego Pre-Approved Mitigation Area
- Existing Development
- MSCP Planned Preserve



Active Map Tool: **Zoom To Full Extent**

A GIS application  
developed by TAIC



# OTAY RIVER WATERSHED

## Watershed Management Plan and Special Area Management Plan

### GEOGRAPHY SEARCH

#### Parcel Search

Parcel Number:

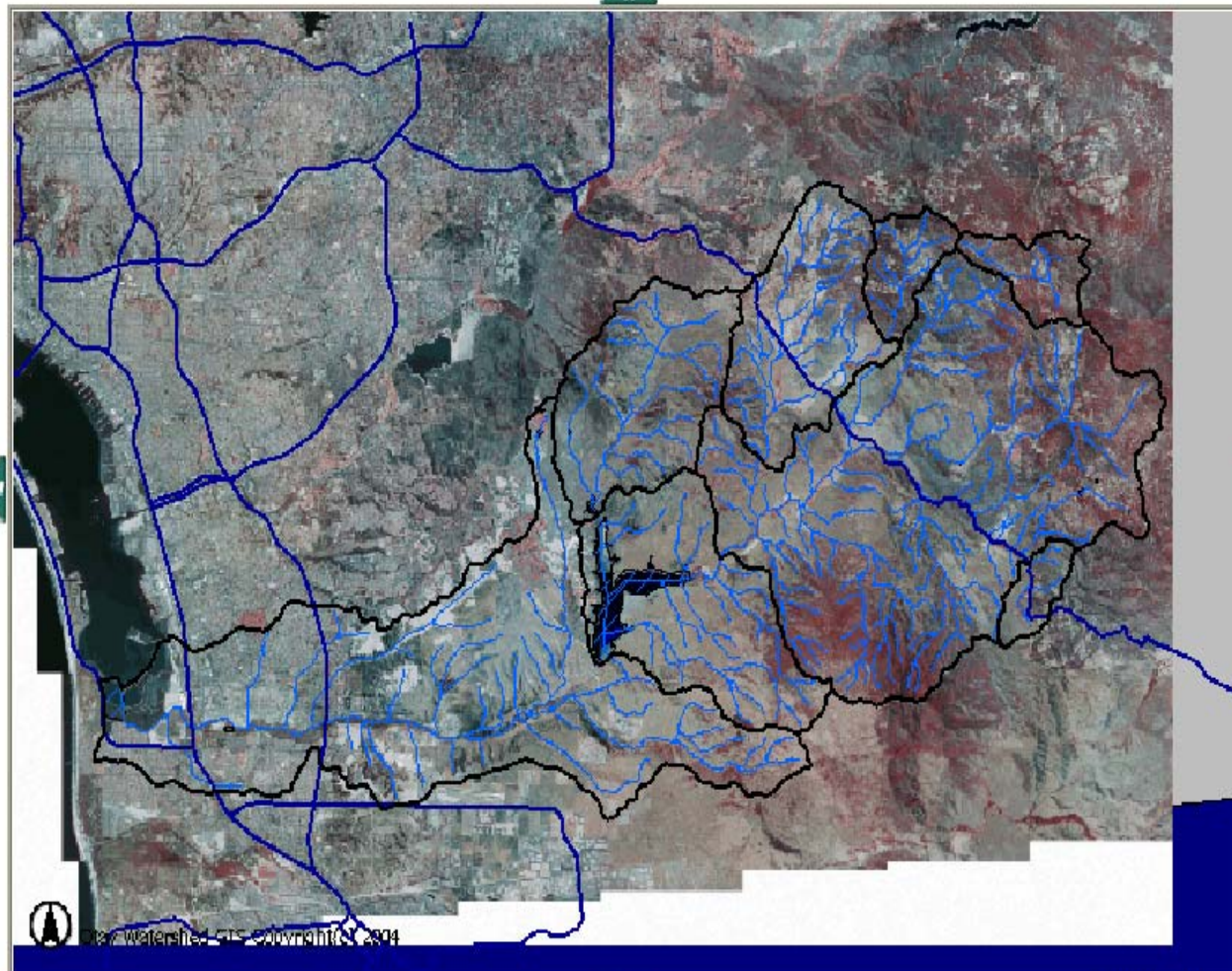
Parcel ID (Click on map):

#### Zoom to Watershed

HSA:   
 Planni:   
 Savage  
 Jamul  
 Otay Valley  
 Lee  
 Lyon  
 Proctor  
 Engineer Springs  
 Hollenbeck

Data

Tools



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Active Map Tool: **Zoom To Full Extent**

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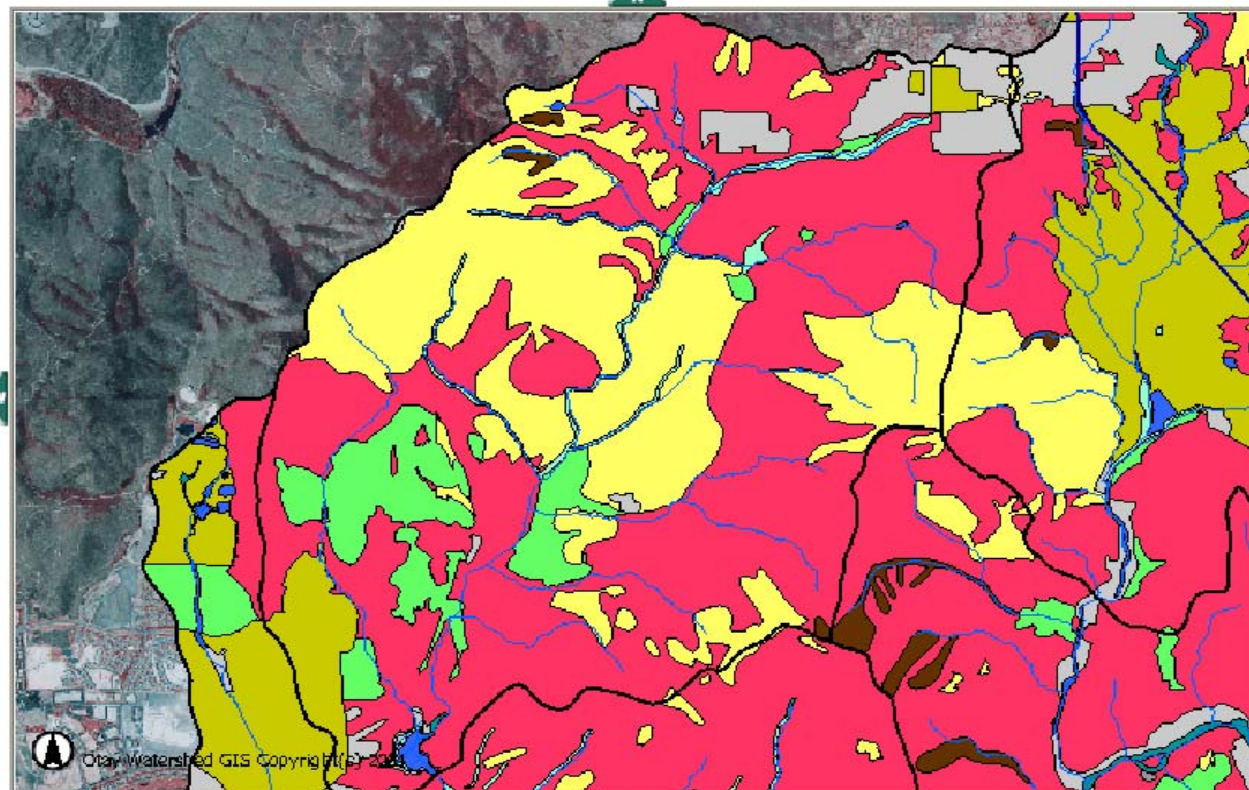
# OTAY RIVER WATERSHED

## Watershed Management Plan and Special Area Management Plan

-  Agricultural Land
-  Chaparral
-  Coastal Dunes and Beaches
-  Coastal Sage Scrub
-  Coastal Sage Scrub/Chaparral
-  Developed/Disturbed Land/Eucalyptus
-  Grassland
-  Maritime Succulent Scrub
-  Meadow and Marsh
-  Montane Coniferous Forest
-  Ocean
-  Open Water
-  Riparian Scrub/Woodland/Forest
-  Woodlands
-  Aerial Photo
-  County Boundary

Data New Search Layers Legend

Tools ID 



Active Map Tool: Zoom To Full Extent

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Page: 20

Record (1..20) of 21 Page 1 of 2

	Acres
Chaparral	658
	1186.73
Alkali Marsh	92.58
Oak Woodland	5.8
Valley Freshwater Marsh	42.34
Live Oak Woodland	22.57
Coastal Sage Scrub	4245.44
Habitat	68.86
Wetland	1.19
Woodland	4.63
Agriculture	251.95



# OTAY RIVER WATERSHED

## Watershed Management Plan and Special Area Management Plan

### Parcel Info

<< Back

#### Parcel Information

Parcel Number: 5981300100  
 Legal Description: POR SEC 31-17-1E  
 Acres: 5.38  
 Land Value: \$2,133,837  
 Improvement Value: \$0  
 Land Use: 65

Situs Address: 0  
 Street:

Subdivision Name: RANCHO JANAL LOWER OTAY  
 RESERVOIR  
 Sub ID | Map: 0 | 000989  
 CA State Plane Coordinates:  
 X Coordinate: 6355413.72172  
 Y Coordinate: 1817049.2963

### Vegetation

### Preserve Status

### Existing LU

### Planned LU

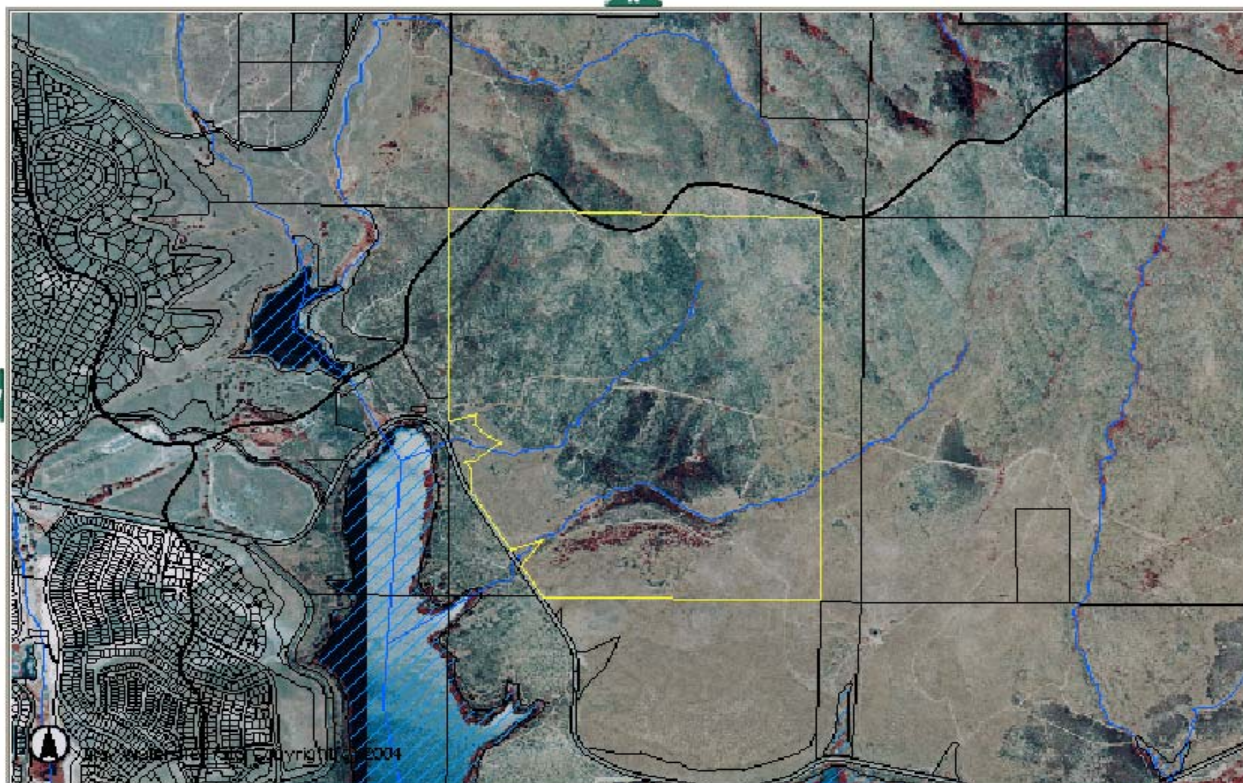
ge : 20

Record (1..20) of 167 Page 1 of 9

Description	Acres
Chaparral	159.52
Coastal Sage-Chaparral Scrub	27.83
Diegan Coastal Sage Scrub	716.14
Disturbed Habitat	107.69
Extensive Agriculture	176.84
Open Engelmann Oak Woodland	2.78

Data New Search Layers Legend

Tools ID Map Navigation and Search icons



Active Map Tool: Zoom To Full Extent

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